

The **Research Center for Pharmaceutical Engineering (RCPE)** is a global leader in pharmaceutical engineering sciences. We help our partners to create and manufacture advanced medicines for patients around the world, through optimizing products and processes.



FOR OUR TEAM/AREA Modeling and Prediction (A1)
WE ARE OFFERING A

PAID DIPLOMA/ MASTER'S THESIS

EVALUATION OF SPRAY MODELS IN COUPLED
SIMULATIONS
REF. NO. DA 141

To dedicated students of Chemical Engineering, Particle Engineering, Mechanical Engineering, Informatics, Software Engineering or related disciplines, we offer an opportunity to write a paid Diploma/Master's thesis.

OBJECTIVE:

CFD-DEM (Computational Fluid Dynamics – Discrete Element Method) is a computational approach, wherein the fluid flow (gas phase) is treated as a continuum (Euler approach) and every particle (solid phase) is modeled as a discrete element (Lagrange approach) In DEM, the motion of discrete particles is tracked by solving Newton's second law of motion.

Nowadays, also thermal coupling with advanced spray and evaporation models become available. Spray coating is often modeled / simulated using either ray tracing or even a discrete droplet approach where every droplet is represented by a single discrete element. The goal of this thesis is to evaluate and improve existing spray, evaporation and deposition models in a tablet coating device. Results, such as particle temperature and moisture content, will be compared to experimental values. A recommendation should be given with regard to applicability and required input data for each modelling approach.

WITHIN THE FRAMEWORK OF THIS DIPLOMA/ MASTER'S THESIS WE OFFER THE FOLLOWING:

- Extensive participation in a top-level and industrially relevant research project in an international environment
- Supervised training in the task
- Assistance of experienced staff with the implementation of innovative ideas
- Access to highly modern infrastructure on campus of Graz University of Technology
- Assistance with the publication of results
- Adequate compensation and opportunities for personal and professional development

FINANCING:

- Compensation on the basis of a service contract

IF YOU ARE INTERESTED IN WRITING YOUR THESIS AT THE INTERFACE BETWEEN UNIVERSITY RESEARCH AND INDUSTRY/ BUSINESS AND TO CONTRIBUTE TO THE OPTIMIZATION OF PRODUCT AND PROCESS DEVELOPMENT IN THE PHARMACEUTICAL INDUSTRY, PLEASE CONTACT US INDICATING THE REFERENCE NUMBER.

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